



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------------------|-------------|----------------------|-----------------------|------------------|
| 10/578,861 | 04/10/2007 | Timo Karmenemi | BHD-2747-3 | 3338 |
| 23117 | 7590 | 06/22/2011 | EXAMINER | |
| NIXON & VANDERHYE, PC | | | KUMAR, KALYANAVENKA K | |
| 901 NORTH GLEBE ROAD, 11TH FLOOR | | | ART UNIT | PAPER NUMBER |
| ARLINGTON, VA 22203 | | | | 3653 |
| | | | MAIL DATE | DELIVERY MODE |
| | | | 06/22/2011 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | |
|------------------------------|-------------------------------|---------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/578,861 | KARMIENIEMI ET AL. |
| | Examiner | Art Unit |
| | KALYANAVENKATESHWARE KUMAR | 3653 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 21 January 2011.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 10-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 10-23 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 11 May 2006 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 1/21/2011
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date, _____.
- 5) Notice of Informal Patent Application
- 6) Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/11/2010 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 10-16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ekenburg et al (USP 5,567,326)** in view of **Hatch et al (USP 6,514,415 B2)**.

4. Regarding claims 10 and 16, Ekenburg discloses all the limitations of the apparatus and method including a device for separating magnetic particles from a liquid mixture thereof, the device comprising; a sample plate (40) defining a plurality of wells (24) for containing a liquid mixture comprised of a liquid and magnetic particles to be separated therefrom, and a vertically, reciprocally movable separating device, which

comprises a reciprocally movable magnet head (34) a plurality of substantially aligned magnets (col. 8, lines 1-10; elements 28 as magnetically responsive metal elements and col. 8, lines 41-52 where the elements are employed in the magnetic separation) positioned relative to the sample plate so that each of the magnets is capable of being introduced into the liquid mixture contained in a respective one of the wells, wherein the magnetic particles are separated from the liquid, but Ekenburg does not disclose wherein some of the magnets are inversely oriented or that the magnets are permanent magnets. Hatch teaches that some magnets are inversely oriented for the purpose of facilitating consistent separation of particles across a container (col. 4, lines 45-50) and that the magnets can be permanent magnets (col. 4, lines 9-24). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Ekenburg, as taught by Hatch, for the purpose of facilitating consistent separation of particles across a container.

5. Regarding claim 11, Ekenburg/Hatch discloses about half of the magnets are inversely oriented (see Fig. 5b).

6. Regarding claim 12, Ekenburg/Hatch discloses substantially every second magnet is inversely oriented (see Fig. 5b).

7. Regarding claim 13, Ekenburg/Hatch discloses magnets are disposed in several rows of several magnets (see Fig. 5b).

8. Regarding claim 14, Ekenburg/Hatch discloses the magnets are united to form one single piece (see Fig. 5b and 220).

9. Regarding claim 15, Ekenburg/Hatch discloses the magnets are permanent magnets whose length/diameter ratio is at least about 2:1 (see Fig. 5b).
10. Regarding claim 19, Ekenburg discloses the magnets are elongated, and wherein the apparatus comprises a support plate and wherein the magnets are joined to and extend outwardly from the support plate (see Fig. 2, elements 28 and 30).
11. Claims 17, 18, and 20-23 rejected under 35 U.S.C. 103(a) as being unpatentable over Ekenburg/Hatch in view of **Gombinsky et al (USP 6,409,925 B1)**.
12. Regarding claims 17, 20, and 22, Ekenburg/Hatch discloses all the limitations of the claims as shown in claims 10 and 16 above, but Ekenburg/Hatch does not disclose the separating device further comprises: a vertically movable casing which defines a plurality of casing wells for receiving a respective one of the magnets of the magnet head, wherein the casing wells are positioned relative to the sample plate wells of the sample plate such that each of the sample plate wells is capable of receiving a respective one of the casing wells, and wherein the magnetic particles of the liquid mixture in the sample wells adhere to a separating area of the casing wells in response to the casing wells and the magnets received therein being moved vertically as a unit into a receiving relationship within the sample wells. Gombinsky teaches that it is obvious to use a cover for a separating device that is reciprocally movable with the device in a sample such that after contact with the particles and the reaction mixture it can be replaced by a clean or sterile tip or cover, and; therefore, provides an easy and inexpensive sterilization of the device (col. 6, lines 35-42 and see Figs. 1B, 3A, and 3B). All the claimed elements were known in the prior art and one skilled in the art could

have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

13. Regarding claim 18, Ekenburg/Hatch discloses the casings are united to form one single piece (see Fig. 4 and col. 3, lines 44-53).
14. Regarding claims 21 and 23, Ekenburg discloses the magnet head comprises a support plate, wherein each of the magnets are joined to and extend outwardly from the support plate (see Fig. 2).

Response to Arguments

15. Applicant's arguments filed 5/11/2010 have been fully considered but they are not persuasive.
16. **Rejection under USC 103**
17. Regarding Applicant's argument," In this regard, applicant notes that the Ekenberg device comprises paramagnetic pins, which are then temporarily magnetized by the magnet pack. The device of the presently claimed invention however comprises real (i.e., "permanent") magnets," the Examiner disagrees. The Examiner asserts that Hatch teaches that it is obvious to use permanent magnets (col. 4, lines 9-24).
18. Regarding Applicant's argument," There is also a strong misbalance of field density. So, the ordinarily skilled person would certainly not invert any magnets in the Ekenberg et al device. There is simply no practical sense in it since it would further decrease the field strength towards the ends of the pins where the particles should be

collected. As such, the ordinarily skilled person would be prejudiced against inversely oriented magnets for these reasons. In the construction of Hatch, magnets are indeed inversely oriented. The purpose of Hatch however is to create a low field which extends only to the bottoms of the vessels: The particles are then held tightly on the bottoms when liquid is removed. The advantages of the present invention are discussed on page 3. Such advantages are in no way obvious on the basis of Hatch. And as noted previously, there would be no motivation provided by Hatch to invert the magnets of Ekenburg et al since to do so would weaken the field strength towards the ends of the pins where the particles are to be collected.," the Examiner disagrees. The Examiner asserts that Hatch teaches that it would be obvious to inverse the magnets as well as use permanent magnets may be made of materials for permanent magnets known in the art such as, but not limited to, ferromagnetic, ferrimagnetic, Alinco, polymer-bonded, rare earth, and ceramic materials and these magnets may have a protective cladding (col. 4, lines 9-24). The claims would have been obvious because the substitution of one known element for another would have yielded predictable results to one of ordinary skill in art at the time of the invention. In the present case, it would be obvious to inverse the magnets as well as use permanent magnets.

Conclusion

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kalyan Kumar whose telephone number is 571-272-8102. The examiner can normally be reached on Mon-Fri 7:00AM-3:30PM.

20. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stefanos Karmis can be reached on 571-272-6744. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

21. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kalyan Kumar
Examiner
Art Unit 3653

/JOSEPH C RODRIGUEZ/

Primary Examiner, Art Unit 3653